Claims

1. A method for establishing a diagnosis of a subtype of B-cell chronic lymphocytic leukaemia (B-CLL) in a individual comprising detecting the presence or absence of at least one expression product, wherein said at least one expression product comprise a nucleotide sequence selected from the group consisting of SEQ ID SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, SEQ ID No:17 and SEQ ID No:18 in a biological sample isolated from the individual.

2. A method for establishing the prognosis of B-CLL in a individual comprising detecting the presence or absence of at least one expression product, wherein said at least one expression product comprise a nucleotide sequence selected from the group consisting of SEQ ID SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, SEQ ID No:17 and SEQ ID No:18 in a biological sample isolated from the individual.

3. A method for determining whether an individual has a B-CLL sub-type with poor prognosis, the method comprising determining the level of an expression product which comprise a nucleotide sequence selected from the group consisting of SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, SEQ ID No:17 and SEQ ID No:18 of said individual, and indicating the individual as having a B-CLL sub-type with poor prognosis if the level of the expression product is at or beyond a discriminating value and indicating the individual as not having a B-CLL sub-type with poor prognosis if the level of the expression product is not at or beyond the discriminating value, the discriminating value being a value which has been determined by measuring the level of the expression product which comprise a nucleotide sequence selected from the group consisting of SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, SEQ ID No:17 and SEQ ID No:18 in both a healthy control population and a population with known B-CLL sub-type with poor prognosis, thereby determining said discriminating value which identifies the B-CLL sub-type population having a poor prognosis.

4. The method according to claim 3, wherein the individual is a member of an unselected population.

5. The method according claim 3, wherein the individual is a member of a population already identified as having a B-CLL sub-type with a poor prognosis.

6. The method according to any of claims 3-5, wherein the determination is performed at several time points at intervals as part of a monitoring of a cancer patient after or during the treatment for primary cancer.

7. The method according to any of the preceding claims, wherein the expression product is a transcriptional product.

8. The method according to claim 7, wherein the at least one transcriptional product is selected from the group consisting of SEQ ID No 2, SEQ ID No 4, SEQ ID No 6, SEQ ID No 7, SEQ ID No 8, SEQ ID No 9, SEQ ID No 10 and SEQ ID No 11.

9. The method according to claim 7, wherein said at least one transcriptional product comprise a nucleotide sequence selected from the group consisting of SEQ ID SEQ ID No:15.

10. The method according to claim 7, wherein said at least one transcriptional product comprise a nucleotide sequence selected from the group consisting of SEQ ID SEQ ID No:16.

11. The method according to claim 7, wherein said at least one transcriptional product comprise a nucleotide sequence spanning the junction between Exon-2 and Exon-3.

12. The method according to claim 11, wherein the nucleotide sequence spanning the junction between Exon-2 and Exon-3 is the last 20 nucleotides of the 3'-end of SEQ ID No:15 and the first 20 nucleotides of the 5'-end of SEQ ID No:16.

13. The method according to any one of the preceding claims, wherein the presence of at least one of the transcriptional product(s) indicates that the individual has a subtype of B-CLL associated with a poor prognosis.

14. The method according to any one of the preceding claims, wherein the presence or absence of the transcriptional product(s) is/are determined by a method selected from the group consisting of a nucleic acid hybridisation based technique and a PCR based technique.

15. The method according to any one of the preceding claims, wherein the biological sample is selected from the group comprising blood, serum, plasma, urine, saliva, lymph node biopsy, bone marrow, spinal liquid, spleen biopsy, and liver biopsy.

16. Use of a compound capable of eliminating transcription of at least one expression product comprising a nucleotide sequence selected form the group consisting of SEQ ID SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, SEQ ID No:17 and SEQ ID No:18 for the treatment of B-CLL.

17. Use of a compound capable of eliminating transcription of at least one transcriptional product comprising a nucleotide sequence selected form the group consisting of SEQ ID SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, SEQ ID No:17 and SEQ ID No:18 for manufacture of a medicament for the treatment of B-CLL.

18. A method of treating B-CLL comprising administering to an individual in need thereof a compound capable of eliminating at least one type of transcriptional product, said

transcriptional product comprising at least one nucleotide sequence selected from the group consisting of SEQ ID SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, SEQ ID No:17 and SEQ ID No:18.

19. The method according to claim 18, wherein all types of the transcriptional product(s) are eliminated.

20. The method according to any one of claims 18 or 19, wherein the at least one transcriptional product is selected from the group consisting of SEQ ID No 2, SEQ ID No 4, SEQ ID No 6, SEQ ID No 7, SEQ ID No 8, SEQ ID No 9, SEQ ID No 10 and SEQ ID No 11.

21. The method according to any one of claims 18-20, wherein the elimination of the at least one transcriptional product is achieved by inhibiting the formation of the transcriptional product.

22. The method according to any one of claims 18-20, wherein the elimination of the at least one transcriptional product is achieved by destroying the transcriptional product.

23. The method according to claim 21, wherein the compound is an nucleotide capable of inhibiting the transcription of a nucleic acid sequence encoding any transcriptional product comprising a nucleotide sequence selected from the group consisting of SEQ ID SEQ ID SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, SEQ ID No:17 and SEQ ID No:18.

24. The method according to claim 22, wherein the compound is an nucleotide capable of destroying any transcriptional product comprising a nucleotide sequence selected from the group consisting of SEQ ID SEQ ID SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, SEQ ID No:17 and SEQ ID No:18.

25. The method according 24, wherein the nucleotide is an si-RNA.

26. An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

i) an amino acid sequence of SEQ ID NO: 3,

ii) an amino acid sequence having at least 60% sequence identity compared to the full length sequence of SEQ ID NO:3

ii) a fragment of SEQ ID NO:3 having at least 60% sequence identity compared to the full length sequence of SEQ ID NO:3.

27. An isolated polypeptide according to claim 26, said polypeptide having interleukin or cytokine activity

28. The isolated polypeptide according to any one of claims 26 or 27, which folds as a 4-helical cytokine.

29. Use of an isolated polypeptide according to any of claims 26-28 in a diagnostic method for a subtype of B-CLL having a poor prognosis.

30. The use according to claim 29, wherein the diagnostic method is based on immunological assays, such as FACS analysis, western blotting, RIA, ELISA, immunohistochemistry etc.

31. Use of an isolated polypeptide as defined in any of the claims 26-28 for the treatment of cancer.

32. Use of an isolated polypeptide as defined in any of the claims 26-28 for the preparation of a medicament for the treatment of cancer.

33. Use according to claims 31 or 32, wherein the cancer is B-CLL.

34. A method of immunisation of a patient in need thereof against B-CLL, wherein said immunisation generates an immune response in said patient which recognises a translational product of SEQ ID No 2, SEQ ID No 4, SEQ ID No 6, SEQ ID No 7, SEQ ID No 8, SEQ ID No 9, SEQ ID No 10 and SEQ ID No 11.

35. A method for producing an antibody with specificity against an isolated polypeptide as defined in any of the claims 26 to 28, said method comprising the steps of

i) providing a host organism,

ii) immunising said host organism with an isolated polypeptide as defined in any of the claims 26 to 28, or transfecting said host organism with an expression vector capable of directing the expression of an isolated polypeptide as defined in any of the claims 26 to 28,

iii) obtaining said antibody.

36. An antibody obtainable by the method of claim 35.

37. An isolated polynucleotide selected from the group consisting of:

i) a polynucleotide comprising SEQ ID NO:5
ii) a polynucleotide encoding a polypeptide having the amino acid sequence of SEQ ID No 3,

iii) a polynucleotide, the complementary strand of which hybridises, under stringent conditions, with a polynucleotide as defined in any of i) and ii), and encodes a polypeptide, which has at least 60% sequence identity with the amino acid sequence of SEQ ID No 3,

iv) a polynucleotide which is degenerate to the polynucleotide of iii), and

v) the complementary strand of any such polynucleotide.

38. The isolated polynucleotide according to claim 37, comprising the nucleotide sequence selected from the group consisting of SEQ ID No:2, SEQ ID No:4, SEQ ID No:6, SEQ ID No:7, SEQ ID No:8, SEQ ID No:9, SEQ ID No:10 and SEQ ID No:11.

39. A diagnostic kit for *ex vivo* or *in situ* diagnosis of a subtype of B-cell chronic lymphocytic leukaemia (B-CLL) in a individual, the kit comprising a detector molecule capable of detecting the presence or absence of at least one expression product, wherein said at least one expression product comprise a nucleotide sequence selected from the group consisting of SEQ ID SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, SEQ ID No:17 and SEQ ID No:18 in a biological sample isolated from the individual.

40. A kit according to claim 39, wherein the detector molecule is a nucleotide.

41. A kit according to claim 40, wherein the nucleotide is capable of hybridising to a nucleotide sequence selected from the group consisting of SEQ ID SEQ ID No:12, SEQ ID No:13, SEQ ID No:14, SEQ ID No:15, SEQ ID No:16, SEQ ID No:17 and SEQ ID No:18 under stringent condition.